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Decline of the 2-10 keV Emission from Eta Carinae

ATel #6338; *Jamar Liburd (U. VI), Michael F. Corcoran (NASA/GSFC-CRESST/USRA), Kenji Hamaguchi (NASA/GSFC-CRESST/UMBC), Theodore Gull (NASA/GSFC), Thomas Madura (NASA/GSFC/NPP), Mairan Teodoro (NASA/GSFC/CNPq), Anthony Moffat and Noel Richardson (U. Montreal), Chris Russell (U. Delaware), Andrew Pollock (ESA), Stan Owocki (U. Delaware)*

on 23 Jul 2014; 21:23 UT

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Subjects: X-ray, Binary, Star

Analysis of Eta Car's X-ray spectrum in the 2-10 keV band using processed data from the X-ray Telescope on Swift reveals a peak flux on July 16, 2014 of 0.046 photons s⁻¹cm⁻² ($3.37 \pm 0.15 \times 10^{-10}$ ergs s⁻¹cm⁻²). This flux is similar to the previous maximum flux seen by the XRT, $3.53 \pm 0.13 \times 10^{-10}$ ergs s⁻¹cm⁻² (0.049 photons s⁻¹cm⁻², ATEL #6298). Since this peak on July 16, the most recent Swift XRT quicklook data show a drop in flux. On July 20, 2014 the XRT flux as seen in the quicklook data was 0.011 photons s⁻¹cm⁻² ($8.3 \pm 0.5 \times 10^{-11}$ ergs s⁻¹cm⁻²). This most likely indicates that the 2-10 keV flux is in its declining phase as Eta Car approaches its deep X-ray minimum stage (Hamaguchi et al., 2014, ApJ, 784, 125) associated with periastron passage of the 2024-day binary orbit. The column density derived from analysis of the July 20 XRT quicklook data is 7.2×10^{22} cm⁻². This is consistent with the column density seen near the same orbital phase in 2003 (7.7×10^{22} cm⁻², Hamaguchi et al., 2007, ApJ, 663, 522). Eta Car's deep X-ray minimum phase is expected to begin on July 30, 2014. Weekly Swift/XRT observations of Eta Car in the 2-10 keV band are planned throughout the X-ray minimum.

Recent Swift/XRT fluxes of Eta Carinae, compared to the RXTE/PCA flux from the previous orbital cycle.

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- 6298** Recent X-ray Activity of Eta Car as Seen by the Swift/XRT
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